NASA OFFICE OF EDUCATION

PARTNERING STRATEGIES FOR EDUCATING AND MOTIVATING
THE NEXT GENERATION OF
AEROSPACE SCIENTISTS AND ENGINEERS

Diane D. DeTroye
Director, Higher Education Division (Acting)







More Than 20 Years of STEM Education Reports





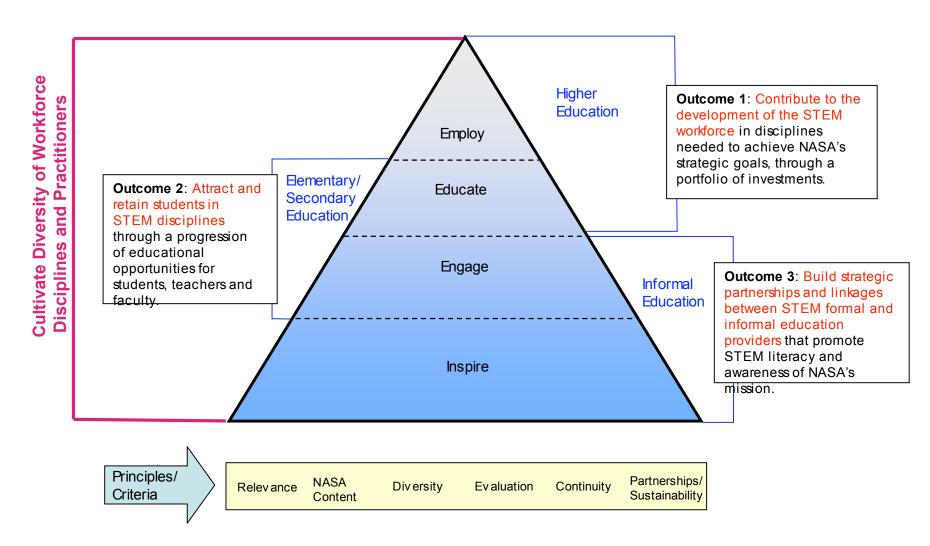


NASA programs create an educational pipeline to inspire, motivate and prepare the future STEM workforce by providing research, and infrastructure opportunities.





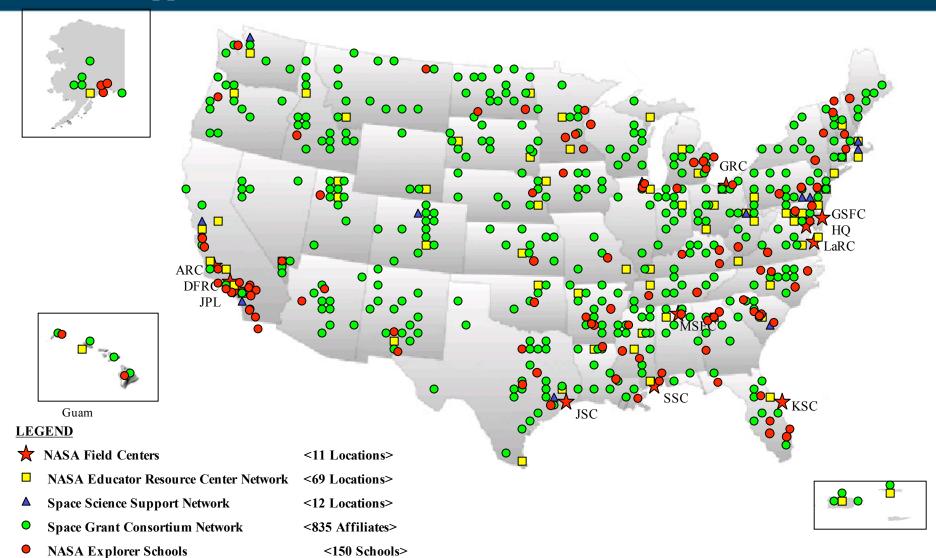
Clearly Defined and Coordinated Portfolio Approach



Outreach: NASA's Physical Assets

Office of Education

Education Opportunities







Agency-level Programs

- Undergraduate Opportunities
- Graduate Opportunities
- Post Doc Program
- Faculty Research Opportunities
- Institutional Infrastructure Programs



Undergraduate Student Opportunities

Undergraduate Student Research Program (USRP)

Targets Rising Junior and Rising Senior Undergraduates

- Provide hands-on, challenging research experiences to stimulate continued student interest in the disciplines aligned with NASA's research mission
- Attract undergraduates with demographic and geographic diversity
- Encourage and facilitate STEM student interest in professional opportunities with NASA and its partner organizations
- Extend and strengthen NASA's commitment to academic and university research
- 8-10 week Summer internships at NASA Centers

http://education.nasa.gov/usrp





Undergraduate Student Opportunities

Motivating Undergraduates in Science and Technology (MUST)

- Undergraduate program with emphasis on outreach to underserved and underrepresented students.
- Supports students, majoring in fields related to NASA's science and technology interests.
- One-year competitive scholarships to rising freshmen, sophomores, juniors and transfer students for up to half the tuition and fees, not to exceed \$10,000 per year.
- Internship stipends of \$5,000 per year





Undergraduate Student Opportunities

National Space Grant College and Fellowship Program

Description: conduct education, research, and public service projects through a national network of university-based consortia

- Mandatory Scholarship Program
 - Average 1,800 undergraduate awards annually
 - Average award = \$2K
- Additional Undergraduate Student Support
 - Average \$3.0M annually for undergraduate student research, participation in NASA programs (ex: Microgravity U, NASA Academy, Moon Buggy), student satellite initiatives

www.nasa.gov/education/spacegrant



Graduate Student Opportunities

Graduate Student Research Program (GSRP)

Targets Full-Time Graduate Students

- Cultivate research ties to the academic community in disciplines aligned with NASA's research mission
- Increasing the number of highly trained scientists and engineers in aeronautics and space-related disciplines
- Broaden the base of students pursuing advanced degrees in science, mathematics, and engineering.

\$24,000 stipend

http://fellowships.hq.nasa.gov/gsrp/program/

Office of Education



Graduate Student Opportunities

NASA Harriett G. Jenkins Predoctoral Fellowship Program (JPFP)



Targets Full-Time Underrepresented Graduate Students

- Increase the number of women, minorities, and persons with disabilities participating in STEM disciplines leading to a doctoral degree in NASA-related disciplines
- Includes 6-week, hands-on research experience at a NASA Center or the Jet Propulsion Laboratory (JPL)
- Fellowship tenure is three years
- \$24,500 per year plus mini-research award opportunities

http://www.uncfsp.org/NASA/Jenkins





Graduate Student Opportunities

National Space Grant College and Fellowship Program

Description: conduct education, research, and public service projects through a national network of university-based consortia

- Mandatory Fellowship Component
 - Average 625 graduate fellowships per year at ~ \$9K;
- Additional Graduate Student Support
 - Average \$3.0M for graduate assistantships, research seed funding, etc.

www.nasa.gov/education/spacegrant





Postdoctoral Opportunities

NASA Postdoctoral Program

Provide recent doctoral scientists and engineers of unusual promise and ability, or senior scientists and engineers, with temporary full-time residence at NASA to perform independent research in collaboration with NASA scientists or engineers.

Opportunity for concentrated research in association with selected members of the permanent professional staff
Stipends start at \$50,000/year

http://nasa.orau.org/postdoc/

For established scientists and engineers, the Program affords an opportunity for research without the interruptions and distracting assignment of permanent career positions.





Faculty Opportunities

Faculty Awards for Research (FAR)

- Expands NASA's research base at HBCUs and OMUs by involving faculty and students in the Agency's sponsored research community
- Three-year awards of up to \$100,000 per year
- Research must focus on area relevant to one of NASA's research enterprises and of interest to a NASA Center or JPL
- Proposed research can support/leverage NASA related research conducted at other universities (both majority and minority), national labs, and/or NASA contractors.
- Up to 25% of funds can go to student support

Next FAR announcement December 2006





National Space Grant College and Fellowship Program

Contributes to the Nation's science enterprise by funding education, research, and public service projects through a national network of University-based Space Grant consortia

- ➤ National network
- ➤ Cooperative programs
- ➤ Interdisciplinary education, research, and public service programs
- Recruit and train U.S. citizens
- ➤ Promote a strong science mathematics, and technology education base

www.nasa.gov/education/spacegrant

State Interests NASA's Mission and Needs The **Directorates** • Workforce Development Space Grant Aeronautics priorities Network: • Exploration Systems Education goals Education Science • Economic growth Research Space Operations Science and Technology Public Service goals

Space Grant is primarily a Higher Education Program with K-12 and Informal Components

Office of Education



University Research Centers

Achieve a broad-based, competitive aerospace research capability among the Nation's Minority Institutions (MI's) to:

- Foster new aerospace science and technology concepts;
- Expand the Nation's base for aerospace research and development;
- Develop mechanisms for increased participation by faculty and students of MI's in mainstream research; and
- Increase the production of socially- and economically-disadvantaged students, who have historically been underrepresented, with advanced degrees in NASA-related fields.

The URC's are multidisciplinary research units established at minority institutions to focus on a specific area of NASA interest

http://mured.nasaprs.com/awards/iset awards/urc/index.cfm

The success of NASA's education portfolio depends upon *strategic planning* in the Agency.

Close coordination is required among the Office of Education, Mission Directorates, Centers, the Office of Human Capital Management, the Office of Diversity and Equal Opportunity, and with our partners

... strengthening the pipeline in STEM disciplines and

... building strategic partnerships and linkages between academia, industry, and government

